

**LIFE PROCESSES WS 2**

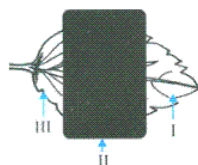
**Class 10 - Science**

**Section A**

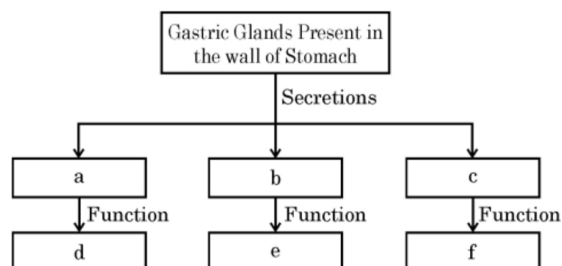
1. What is the role of following in human digestive system- [2]
  - a) mucus
  - b) Bile
  - c) Trypsin
2. What is chemical composition of food? [2]
3. Two green plants are kept separately in oxygen free containers, one in the dark and the other in contiguous light. Which one will live longer? Give reasons. [2]
4. State the function of epiglottis. [2]
5. What would happen if all the green plants disappear from earth? [2]
6. List various functions of food. [2]
7. Name the energy currency in the living organisms. When and where is it produced? [2]
8. Dark reaction of photosynthesis does not need light. Do plants undergo dark reaction at night explain. [2]
9. Why does absorption of digested food occur mainly in the small intestine? [2]
10. Is **nutrition** a necessity for an organism? Discuss. [2]
11. The body temperature of some organisms depends on the temperature of the environment. Comment. [2]
12. In case of diarrhoea name the major process which occurs in large intestine which is no longer occurring normally. [2]
13. Why does high temperature inhibit photosynthetic action? [2]
14. What are the functions of gastric glands present in the wall of the stomach? [2]
15. For the experiment, "Light is necessary for Photosynthesis", Why the potted plant is first kept in darkness for a day? [2]
16. What is the role of Hydrochloric acid in our stomach? [2]
17. In the experimental set-up to show that the germinating seeds give out carbon dioxide, answer the following questions: [2]
  - i. Why do we keep the conical flask airtight?
  - ii. Name the substance kept in the small test tube inside the conical flask. Write its role.
  - iii. Why does water rise in the delivery tube?
18. Write characteristics of enzymes. [2]
19. Differentiate extracellular digestion and intracellular digestion. [2]
20. Why is photosynthesis called a light dependent process? [2]
21. What is the significance of emulsification of fats? [2]
22. What is the exact role of light in photosynthesis? [2]
23.
  - i. What is the internal energy reserve in plants and animals? [2]
  - ii. How desert plants perform photosynthesis if their stomata remain closed during the day?

24. Mention the role of pancreatic enzyme. [2]
25. What are the necessary conditions for autotrophic nutrition and what are its byproducts? [2]
26. Why do herbivores have longer small intestine than carnivores? [2]
27. i. State the role played by the following in the process of digestion. [2]
- Enzyme trypsin
  - Enzyme lipase
- ii. List two functions of finger-like projections present in the small intestine.

28. Draw a labelled diagram of a cross-section of the leaf. [2]
29. Fermentation is a form of anaerobic reaction. Explain. [2]
30. Given below is a sketch of a leaf partially covered with black paper and which is to be used in the experiment to show that light is compulsory for the process of photosynthesis. At the end of the experiment, which one of the leaf parts labeled I, II and III will become blue black when dipped in iodine solution? [2]



31. Explain the role of mouth in digestion of food. [2]
32. Write in sequence the steps for experimental verification of the fact that **sunlight is essential for photosynthesis**. [2]
33. Complete the following flow chart as per the given instructions: [2]



34. Draw a neat labelled diagram of chloroplast. [2]
35. Why should we place a plant in dark at least for 24-48 hours before performing photosynthesis experiment? [2]

### Section B

36. Food does not pass through the digestive system by 'gravity'. This is clear from the fact that we can digest the food even if we are lying down. Explain the logic behind the passage of food through our digestive system. [3]
37. A portion of destarched leaf of a potted plant was covered with a black strip of paper. The plant was exposed to sunlight for six hours and then tested for starch. What will be the observation? [3]
38. Why the leaf is boiled in alcohol for a few minutes using a water bath in an experiment to show that sunlight is necessary for photosynthesis? [3]
39. Leaves of healthy potted plant were coated with vaseline. Will this plant remain healthy for long? Give reasons for your answer. [3]
40. Name the following [3]
- The process in plants that links light energy with chemical energy.
  - Organisms that can prepare their own food.
  - The cell organelle where photosynthesis occurs.
  - Cells that surround a stomatal pore.
  - Organisms that cannot prepare their own food.

vi. An enzyme secreted from gastric glands in the stomach that act on proteins.

41. If a plant is releasing carbon dioxide and taking in oxygen during the day, does it mean that there is no photosynthesis occurring? Justify your Answer. [3]
42. In each of the following situations what happens to the rate of photosynthesis? [3]
- Cloudy days
  - No rainfall in the area
  - Good manuring in the area
  - Stomata get blocked due to dust
43. How to destarch the leaves for an experiment to show that sunlight is necessary for photosynthesis? [3]

### Section C

**Question No. 44 to 47 are based on the given text. Read the text carefully and answer the questions:** [4]

Nutrition is the process of taking food by an organism and the utilization of food for energy. This is a vital process that helps living beings obtain their energy from various sources.

Nutrients are substances that provide nutrition.

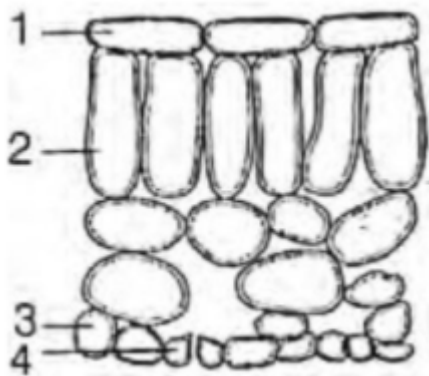
The mode of nutrition varies from one species to another. Plants do photosynthesis to prepare their own food. Animals depend on plants for food.



44. What do you understand by nutrition?
45. Mention how organisms like bread moulds and mushrooms obtain their food.
46. What do you understand by autotrophic nutrition?
47. What is common for Cuscuta, ticks, and leeches?
48. **Read the following and answer any four questions:** [4]

Leena is a class X girl and actively participates in the Green School programme. She planted some trees as she needs to know and observe how plants grow by preparing their own food. She placed a potted plant in her room and observed after 3-4 weeks that leaves turned pale-yellow instead of green in colour. She realized her mistake and kept the plant back in the sunlight.

- i. The diagram shows the arrangement of cells inside the leaf of a green plant.



Which cells normally contain chloroplast?

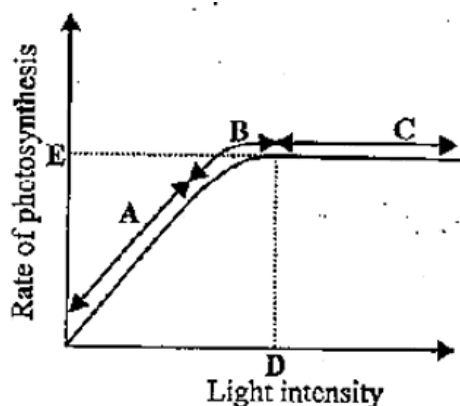
- a. 1 and 2

- b. 1 and 4
- c. 2 and 4
- d. 2 and 3

ii. In photosynthesis which substances are used up, which are produced and which are necessary but remains unchanged after the reaction?

	Substance used up	Produced	Remain unchanged
(a)	Carbon dioxide	Water	Oxygen
(b)	Chlorophyll	Carbon dioxide	Water
(c)	Oxygen	Starch	Cellulose
(d)	Water	Oxygen	Chlorophyll

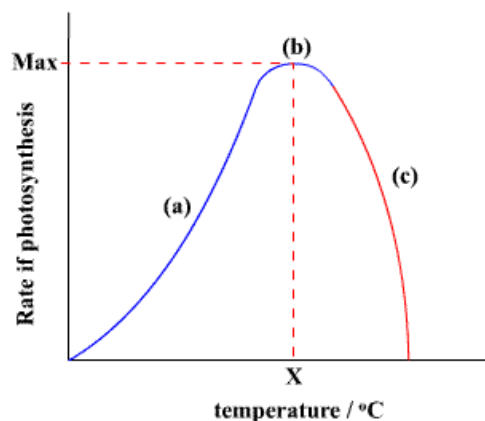
iii. The following graph shows the effect of light intensity on the rate of photosynthesis which of the following statement/statements is correct?



- a. Light is a limiting factor in the region A
- b. Region C represents that rate of photosynthesis is not increased further by increasing light intensity because some other factors become limiting
- c. Point D represents the intensity of light at which some other factors becomes limiting
- d. All of these

iv.

**A graph to show the effect of temperature on the rate of photosynthesis**

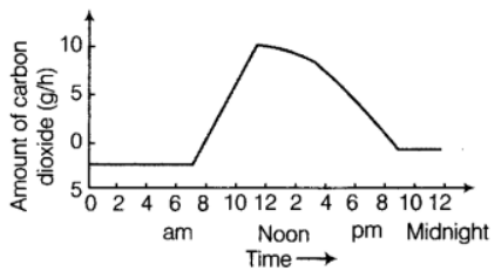


At what point is optimum temperature reached?

- a. Region (a)
- b. Point (b)

- c. Region (c)
- d. None of these

v. The graph shows how the amount of CO<sub>2</sub> taken in by a plant varies through a 24 hour period.



At what time of the day was the rate of photosynthesis the greatest?

- a. At 7 am
- b. At 12 (noon)
- c. At 10 pm
- d. At 6 am

### Section D

- 49. Define nutrition. What are the different modes of nutrition? [5]
- 50. i. Why is nutrition a necessity for an organism? State three reasons. [5]  
ii. What is likely to happen if green plants disappear from Earth?
- 51. Explain nutrition in Amoeba. [5]
- 52. Draw the diagram of the alimentary canal of man and label the following parts. [5]  
Mouth, Oesophagus, Stomach, Intestine
- 53. What is the significance of photosynthesis? [5]
- 54. What is nutrition? Briefly explain the two major kinds of nutrition. [5]
- 55. What is digestive gland? Name the various digestive glands of man and their secretions. [5]
- 56. Given below is a well labelled diagram of the human digestive system. [5]

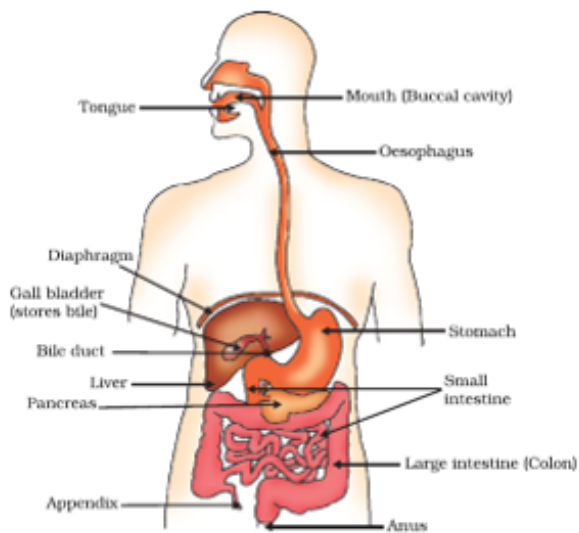


Diagram: Human alimentary canal

Using the above diagram, answer the following questions:

- i. How saliva in the mouth digests the food?
- ii. What is the role of the oesophagus in the human digestive system?
- iii. Why gastric juice is acidic in nature?
- iv. What is the function of mucus in the gastric juice?

- v. How pancreatic juice digests the various components of food?
57. Give the role of liver in the human beings. [5]
  58. How do carbohydrates, proteins and fats get digested in human beings? [5]
  59. List the steps of preparation of a temporary mount of a leaf peel to observe stomata. [5]
  60. Explain the process of digestion of food in mouth, stomach and small intestine in human body. [5]
  61. Describe one experiment to demonstrate that chlorophyll is essential for photosynthesis. [5]
  62.
    - a. Name the process and explain the type of nutrition found in green plants. List the raw materials required for the process. Give chemical equation for the mentioned process. [5]
    - b. Write the three observation that occur during this process.
  63.
    - i. Draw a diagram depicting human alimentary canal and label the components gall bladder, liver and pancreas in it. [5]
    - ii. State the role of liver and pancreas.
    - iii. Name the organs which perform the following functions in humans.
      - a. Absorption of digested food
      - b. Absorption of water
  64. What do you understand by parasitic nutrition? [5]
  65. Explain the process of nutrition in Amoeba. [5]
  66. What is the difference between an intercellular and intracellular digestion? [5]
  67. Describe the alimentary canal of man. [5]
  68.
    - i. Why is nutrition necessary for the human body? [5]
    - ii. What causes the movement of food inside the alimentary canal?
    - iii. Why is the small intestine in herbivores longer than in carnivores?
    - iv. What will happen if the mucus is not secreted by the gastric glands?
  69.
    - i. Why do the herbivores need longer small intestine as compared to that of the carnivores? [5]
    - ii. List three types of substances secreted by the gastric glands and state the role of each in the digestion of food in alimentary canal of human beings.
  70. Describe the process of digestion of food in human beings. [5]
  71. Explain the nutrition process in an Amoeba with the help of a diagram. [5]
  72. Describe the three pathways of break down of glucose. [5]
  73. Describe an experiment to demonstrate that  $\text{CO}_2$  is essential for photosynthesis. [5]
  74.
    - a. Write the reaction that occurs when glucose breaks down anaerobically in yeast. [5]
    - b. Write the mechanism by which fishes breath in water.
    - c. Name the balloon like structures present in lungs. List its two functions.
    - d. Name the respiratory pigment and write its role in human beings.
  75. Discuss the structure of cross-section of leaf. [5]